Claims

[c1]   1.An cooling apparatus for illumination system of optical engine, comprising:

an illumination system comprising a light source and a lamp base for the light source, wherein the lamp base has a side;

an air duct body having a top side, a bottom side, and an interior side between the top side and the bottom side, wherein the bottom side is fixed on the side of the lamp base;

at least one partition locating in the interior side of the air duct body and separating the air duct body into a plurality of air ducts;

an external air duct connecting one of the plural of air ducts from the bottom side of the air duct body and extends the air duct to outside of the air duct body; and

a fan attached on the top side of the air duct body.

[c2]   2.The cooling apparatus for illumination system of optical engine as claimed in Claim 1, wherein the plurality of air ducts are light source air duct, lens air duct, and auxiliary air duct, and the plurality of air ducts have different surface areas.

[c3]   3.The cooling apparatus for illumination system of optical engine as claimed in Claim 2, wherein the lamp base has an exit, connecting to the entrance of a lens framework, and forming an adjoining surface, wherein the lens air duct spans across the sides of the adjoining surface.

[c4]   4.The cooling apparatus for illumination system of optical engine as claimed in Claim 2, wherein the bottom of the auxiliary air duct installed a bottom plate and an air guiding hole, wherein the bottom plate can guide the air to the air guiding hole, wherein the external air duct extends from underneath the air duct body to the air guiding hole and further by the side of the exit of the lens framework.

[c5]   5.The cooling apparatus for illumination system of optical engine as claimed in Claim 2, wherein the light source air duct guides the most amount of the air to the light source inside the lamp base.

[c6]

6.The cooling apparatus for illumination system of optical engine as claimed in

Claim 1, wherein the fan is an axial fan.